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REMARKS

Claims 1-15 are all the claims presently pending in the application. Claims 1-3, 5-6 and 10-13 have been amended to more particularly define the invention. Claim 15 has been added to assure Applicant the degree of protection to which his invention entitles him.

It is noted that the claim amendments herein or later are not made to distinguish the invention over the prior art or narrow the claims or for any statutory requirements of patentability. Further, Applicant specifically states that no amendment to any claim herein or later should be construed as a disclaimer of any interest in or right to an equivalent of any element or feature of the amended claim.

The Examiner has objected to claims 5-6 and 12-13 based on informalities. Applicant has amended the claims above to address the informalities cited by the Examiner and respectfully requests the Examiner to reconsider and withdraw the objections.

With respect to the prior art rejections, claims 1-2, 4 and 7-9 stand rejected under 35 U.S.C. §102(b) as being anticipated by Armbruster (U.S. Patent No. 4,370,155). Claims 1-3 and 5-8 stand rejected under 35 U.S.C. §102(b) as being anticipated by Orel (U.S. Patent No. 4,043,776). Claim 10 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Armbruster or Orel. Claims 11-13 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Armbruster or Orel in view of Tsunoda et al. (U.S. Patent No. 4,729,293). Claim 14 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Armbruster or Orel in view of Knudson (U.S. Patent No. 3,747,300).

These rejections are respectfully traversed in the following discussion.

I. THE CLAIMED INVENTION

An exemplary aspect of the invention, as recited in claim 1, is directed to a tabletop-type air cleaner including a front opening portion to suck air containing smoke, the front opening portion being placed at a front of the air cleaner, a blower to forcedly feed the air having been sucked from the front opening portion in a centrifugal direction, a pair of right and left peripheral opening portions to emit air fed forcedly from the blower ahead of the air cleaner, the pair of peripheral opening portions being placed in a fringe portion on the right and the left at the front of the air cleaner, and at least one dust collecting filter being placed at least one of between the front opening portion and the blower and between the blower and each of the peripheral opening portions making up the pair of right and left peripheral opening portions to remove the smoke. The front opening portion is located between the right and left peripheral opening portions.

Conventional air cleaners include a suction port placed at the front of the air cleaner and a blow-off port at the rear of the air cleaner. In this configuration, air containing smoke is sucked in through the front of the device and cleaned air is discharged from the rear. However, such air cleaners cannot readily be placed near a wall because the blow-off port located at the rear would be blocked resulting in poor usability. (See Application at Figure 10 and page 1, lines 16-25)

Another known air cleaner provides an intra-device suction port and intra-device blow-off ports placed discreetly at four places configured to produce a vortex flow of cleaned air from the blow-off ports around the smoke being sucked into the suction port. In this manner, the dispersion of the smoke is suppressed and improvement in sucking efficiency is

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expected. However, complete formation of a stable vortex flow is difficult using a simple configuration. Potentially, an air flow occurs which would impair suction of the smoke. A descending flow is produced by the crumbling of the vortex flow which may impinge on the surface upon which the device is located and disturb any documents located near the device. (See Application at Figure 11 and page 2, lines 1-28)

The claimed invention, on the other hand, provides a tabletop-type air cleaner including a pair of peripheral opening portions being placed in a fringe portion on the right and the left at the front of the air cleaner, wherein a front opening portion is located between the right and left peripheral opening portions. These features, amongst others, enable an air curtain containing air flows emitted from the peripheral opening portions to be formed on both sides of the flow of smoke being sucked into the front opening portion, thus smoke is retracted into the air cleaner without excessive dispersion of the smoke into surroundings. In this manner, smoke sucking efficiency is improved using a simple configuration. (See Application at page 12, lines 6-27)

II. THE PRIOR ART REFERENCES

A. The Armbruster Reference

The Examiner alleges that the invention of claims 1, 2, 4 and 7-9 are anticipated by Armbruster and that claim 10 is rendered obvious by Armbruster. However, Applicant respectfully submits that the reference does not teach or suggest each and every element of the claimed invention.

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Armbruster discloses an air circulating device for providing a constant movement of air within the occupant zone of rooms which do not contain openable windows to allow natural air circulation during hot days. (See Armbruster at Abstract)

However, Armbruster does not teach or suggest a pair of peripheral openings being placed in a fringe portion on the right and left at the front of the air cleaner wherein the front opening portion is located between the right and left peripheral opening portions, as recited in the claimed invention.

Rather, Armbruster discloses an inlet 18 positioned in a base 16 so as to receive air flowing parallel and adjacent to the floor and a casing 22 positioned over the base 16 including a vertical air chamber 52 in which outlet air passes into the room in two divergent directions. (See Armbruster at Figures 1-4 and column 3, lines 14-20) Armbruster indicates that “[p]laced on opposite sides of the air chamber 52 at an angle of approximately 180° are a pair of vertical elongated slots 54 and 56 through which air forced into vertical air chamber 52 can exit in a substantially horizontal flow path.” (Armbruster at column 3, lines 56-60)

Clearly, Armbruster discloses that the base 16 and the casing 22 are vertically displaced. Therefore, the inlet 18 located in the base is not located between the pair of elongated vertical slots 54 and 56 located in the casing 22. Indeed, Armbruster makes no reference or suggestion that an inlet is located between the right and left outlet ports, as in the claimed invention. As noted above, such a configuration enables an air curtain containing emitted air flows to be formed on both sides of the flow of smoke, thus smoke is sucked into the air cleaner without excessive dispersion of the smoke into surroundings.

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Therefore, Applicant submits that there are elements of the claimed invention that are not taught or suggest by Armbruster. Therefore, the Examiner is respectfully requested to withdraw this rejection.

B. The Orel Reference

The Examiner alleges that the invention of claims 1-3 and 5-8 are anticipated by Orel. However, Applicant respectfully submits that the reference does not teach or suggest each and every element of the claimed invention.

Orel discloses a device for filtering smoke including an ashtray which supports a shroud for confining the smoke. (See Orel at Abstract)

However, as above, Orel does not teach or suggest a pair of right and left peripheral opening portions to emit air fed forcedly from the blower ahead of the air cleaner, the pair of peripheral opening portions being placed in a fringe portion on the right and the left at the front of the air cleaner, wherein the front opening portion is located between the right and left peripheral opening portions, as recited in the claimed invention.

Rather, Orel discloses using a shroud 25 to facilitate the confinement of smoke from a cigarette to a restricted area and an air moving means, such as a fan 35, supported by the shroud above an ashtray 11. (See Orel at column 3, lines 64-66 and column 4, lines 39-40) The fan 35 exhausts air through discharge openings 51 to the environment. The discharge openings 51 are provided in a case 55 and extend circumferentially around the case 55 and laterally to the fan blades 39. (See Orel at Figure 4 and column 5, lines 15-20)

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Clearly, Orel discloses that the discharge openings 51 are located on the side of the fan case 55. Therefore, Orel does not teach or suggest a pair of peripheral openings being placed in a fringe portion on the right and left at the front of the air cleaner, as in the claimed invention. Further, the discharge openings 51 disclosed in Orel do not emit air forcedly ahead of the air cleaner, as recited in the claimed invention. Rather, the discharge openings 51 in Orel extend around the periphery of the case 55 discharging air from the side of the device.

Additionally, Orel makes no reference or suggestion that the air intake is located between the right and left outlet ports, as in the claimed invention. Rather, the intake air flow in Orel is substantially perpendicular to the output air flow. Therefore, Orel inherently cannot achieve the benefit provided by the air intake being located between the right and left outlet ports which, as noted above, is the formation of an air curtain containing emitted air flows on both sides of the flow of smoke which allow the smoke to be retracted into the air cleaner without excessive dispersion of the smoke into surroundings. Indeed, Orel does not even recognize the desirability or benefit of such a feature.

Therefore, Applicant submits that there are elements of the claimed invention that are not taught or suggest by Orel. Therefore, the Examiner is respectfully requested to withdraw this rejection.

C. The Tsunoda et al. Reference

The Examiner alleges that Armbruster or Orel would have been combined with Tsunoda et al. to form the invention defined in claims 11-13. However, Applicant submits

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that these references would not have been combined and even if combined, the combination would not teach or suggest each and every element of the claimed invention.

Tsunoda et al. discloses an air direction control apparatus including a remote controller having an air direction change operation section and a transmitting section, and an associated device responsive to the remote controller to manipulate louvers to change the direction of the air. (See Tsunoda et al. at Abstract)

Applicant respectfully submits that these references would not have been combined as alleged by the Examiner. Indeed, no person of ordinary skill in the art would have considered combining these disparate references, absent impermissible hindsight.

In fact, Applicant submits that the Examiner can point to no motivation or suggestion in the references to urge the combination as alleged by the Examiner. Indeed, contrary to the Examiner's allegations, neither of these references teaches or suggests their combination.

Therefore, Applicant respectfully submits that one of ordinary skill in the art would not have been so motivated to combine the references as alleged by the Examiner and, therefore, the Examiner has failed to make a prima facie case of obviousness.

The Examiner concedes that Armbruster and Orel do not teach or suggest each of the peripheral opening portions having a plurality of blade plates which give a directional property the air being emitted, as recited in claim 11, the blade plates are attached so as to be rotatable so that a direction of the air being emitted is changed, as recited in claim 12, and an air flow direction control circuit is mounted which is used to electrically control rotations of the blade plates, as recited in claim 13. Rather, the Examiner attempts to rely on Tsunoda et al. to make up for the deficiencies of Armbruster and Orel.

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However, Tsunoda et al. fails to make up for the deficiencies of Armbruster and Orel described above, directed toward a pair of peripheral openings being placed in a fringe portion on the right and left at the front of the air cleaner wherein the front opening portion is located between the right and left peripheral opening portions.

Neither Armbruster, nor Orel, nor Tsunoda et al., nor any combination thereof, teaches or suggests the pair of peripheral opening portions being placed in a fringe portion on the right and the left at the front of the air cleaner, wherein the front opening portion is located between the right and left peripheral opening portions, as recited in claims 11-13.

Thus, even assuming arguendo that Tsunoda et al. may disclose the features alleged by the Examiner, there is no teaching or suggestion in Tsunoda et al. of a front opening portion for sucking air containing smoke is located between a pair of right and left peripheral opening portions which emit air to enable an air curtain containing the emitted air flows to be formed on both sides of the flow of smoke, thus smoke is more efficiently sucked into the air cleaner without excessive dispersion of the smoke into surroundings, as in Applicant's claimed invention. Indeed, the cited reference does not even recognize the desirability or benefit of providing such a feature. Therefore, Tsunoda et al. clearly does not make up for the deficiencies of Armbruster and Orel.

In light of the above, Applicant submits that these references would not have been combined and even if combined, the combination would not teach or suggest each and every element of claims 11-13. Therefore, the Examiner is respectfully requested to withdraw this rejection.

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D. The Knudson Reference

The Examiner alleges that Armbruster or Orel would have been combined with Knudson to form the invention defined in claim 14. However, Applicant submits that these references would not have been combined and even if combined, the combination would not teach or suggest each and every element of the claimed invention.

Knudson discloses a portable electrostatic air cleaner having a case with an air inlet and an air outlet and fan means for moving air through the case from the inlet to the outlet. (See Knudson at Abstract)

Applicant respectfully submits that these references would not have been combined as alleged by the Examiner. Indeed, no person of ordinary skill in the art would have considered combining these disparate references, absent impermissible hindsight.

In fact, Applicant submits that the Examiner can point to no motivation or suggestion in the references to urge the combination as alleged by the Examiner. Indeed, contrary to the Examiner's allegations, neither of these references teaches or suggests their combination.

Therefore, Applicant respectfully submits that one of ordinary skill in the art would not have been so motivated to combine the references as alleged by the Examiner and, therefore, the Examiner has failed to make a prima facie case of obviousness.

The Examiner concedes that Armbruster and Orel do not teach or suggest the air cleaner comprising an electrically-controlled dust collecting unit which is used to electrostatically collect dust by corona charging fine particles floating in the air, as recited in claim 14. Rather, the Examiner attempts to rely on Knudson to make up for the deficiencies of Armbruster and Orel.

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However, Knudson fails to make up for the deficiencies of Armbruster and Orel described above, directed toward a pair of peripheral openings being placed in a fringe portion on the right and left at the front of the air cleaner wherein the front opening portion is located between the right and left peripheral opening portions.

Neither Armbruster, nor Orel, nor Knudson, nor any combination thereof, teaches or suggests the pair of peripheral opening portions being placed in a fringe portion on the right and the left at the front of the air cleaner, wherein the front opening portion is located between the right and left peripheral opening portions, as recited in claim 14.

Thus, even assuming arguendo that Knudson may disclose an electrically-controlled dust collecting unit, as alleged by the Examiner, there is no teaching or suggestion in Knudson of a front opening portion for sucking air containing smoke is located between a pair of right and left peripheral opening portions which emit air to enable an air curtain containing the emitted air flows to be formed on both sides of the flow of smoke, thus smoke is more efficiently sucked into the air cleaner without excessive dispersion of the smoke into surroundings, as in Applicant's claimed invention. Indeed, the cited reference does not even recognize the desirability or benefit of providing such a feature. Therefore, Knudson clearly does not make up for the deficiencies of Armbruster and Orel.

In light of the above, Applicant submits that these references would not have been combined and even if combined, the combination would not teach or suggest each and every element of claim 14. Therefore, the Examiner is respectfully requested to withdraw this rejection.

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III. FORMAL MATTERS AND CONCLUSION

The Office Action objects to Figures 10 and 11. The attached Request for Approval of Drawing Corrections amends Figures 10 and 11 to label them as prior art.

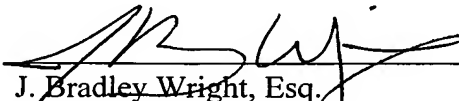
In view of the foregoing, Applicant submits that claims 1-15, all the claims presently pending in the application, are patentably distinct over the prior art of record and are allowable, and that the application is in condition for allowance. Such action would be appreciated.

Should the Examiner find the application to be other than in condition for allowance, the Examiner is requested to contact the undersigned attorney at the local telephone number listed below to discuss any other changes deemed necessary for allowance in a telephonic or personal interview.

To the extent necessary, Applicant petitions for an extension of time under 37 CFR §1.136. The Commissioner is authorized to charge any deficiency in fees, including extension of time fees, or to credit any overpayment in fees to Attorney's Deposit Account No. 50-0481.

Respectfully Submitted,

Date: July 14, 2005


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AMENDMENTS TO THE DRAWINGS:

The attached annotated sheet of drawings includes changes to Figures 10 and 11.

Further, a “replacement” sheet incorporating the proposed corrections is submitted herewith.

In Figures 10 and 11, a legend indicating that the illustrations are prior art has been added, as requested by the Examiner.

FIG. 10

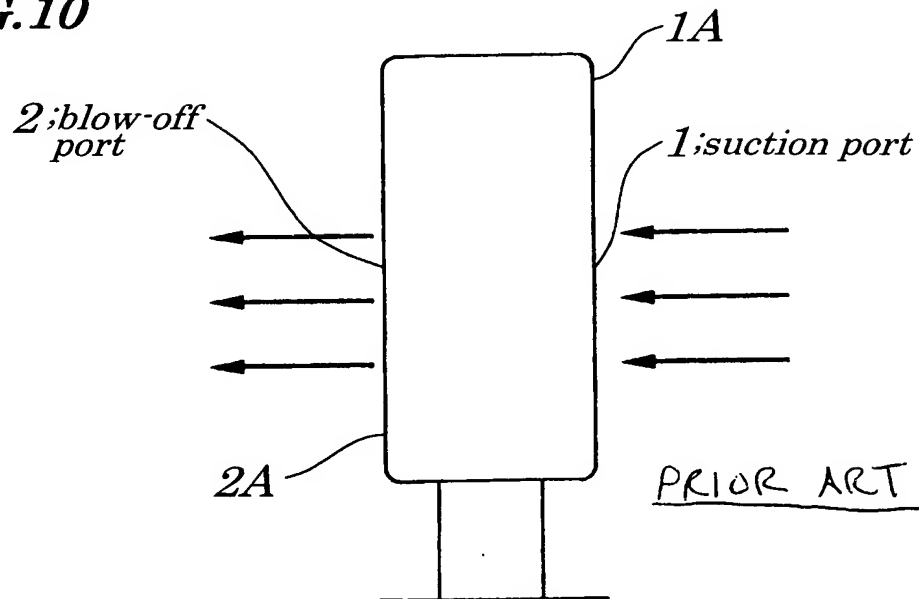


FIG. 11

